



## Report of: Director of Public Health

Meeting of	Date	Agenda Item	Ward(s)
Islington Health and Care Scrutiny Committee	14 September 2015	Item	All

Delete as appropriate	Exempt	Non-exempt

## SUBJECT: Review of the health impacts of damp housing conditions

### 1.0 Background

1.1 On Thursday, 2nd July, the Islington Health and Care Scrutiny Committee approved the Scrutiny Initiation Document (SID) relating to a Scrutiny Review of the Health Impact of Damp Housing Conditions (see appendix A).

1.2 The stated aim of the review was:

*“To understand the scale and nature of the negative health and wellbeing impacts of damp housing conditions in Islington, and the effectiveness of current arrangements and measures for tackling damp and its adverse impacts on health.”*

1.3 The objectives of the review were:

- *To understand the relationship between damp housing conditions and health and wellbeing in general, and specifically the impact of damp housing on Islington residents’ health and wellbeing.*
- *To particularly assess the impact of dampness on children and how it affects absence from school.*

- *To understand the extent of damp housing across all tenure types in Islington, and the current arrangements and mechanisms that exist for preventing, identifying, addressing and mitigating its impacts?*
- *To assess the effectiveness of current approaches to tackling both the structural and behavioural causes of damp, with a particular focus on health-related outcomes, and to make recommendations for increasing the impact of local measures, as appropriate.*

## **2.0 Introduction**

2.1 Tackling cold and damp housing is important because of its association with a range of health conditions, from common colds and asthma through to respiratory and heart conditions that can lead to early death. Cold and damp homes are also associated with poor mental health and poor social and economic outcomes as well as fuel poverty. Islington Council has a number of schemes that go above and beyond national provision. Dampness and mould growth in Islington council's own housing stock has been addressed through improved heating, insulation and ventilation and the council has begun an education and awareness campaign on condensation and its behavioural causes.

## **3.0 What is damp and what causes it?**

- 3.1 Damp is the presence of unwanted moisture diffused through the air, condensed on a surface or within the solid substance of a building, typically with detrimental or unpleasant effects. Excess moisture often leads to the growth of mould on building surfaces.
- 3.2 Moisture in buildings is most commonly caused by leaking pipes, wastes or overflows; rain seeping through the roof where a tile or slate is missing, spilling from a blocked gutter, penetrating around window frames, or leaking through a cracked pipe; and rising damp due to a defective damp-course or because there is no damp-course. These causes of damp often leave a "tidemark" and necessary repairs should be carried out to remove the source of damp. Newly-built houses may be damp because the water used during construction (e.g., plaster) is still drying out. It may take weeks of heating and ventilating to dry out this damp. Dehumidifiers may help. When the source of moisture is not related to structural faults, leaks or rising damp or the newness of the property, it is probably due to condensation.
- 3.3 Three factors contribute to the condensation of water on building surfaces:
- 1) Humidity of indoor air: Condensation appears when the indoor air in a room cannot hold the level of moisture. Warm air can hold more moisture than cold air. For example, running a bath causes steam. As the air in the bathroom fills up with water vapour, it can no longer hold all the moisture that it contains. As a result, tiny drops of water appear, and develop first on cold surfaces such as mirrors and window sills.
  - 2) Low temperature: Condensation can be worse when it is cold. The humid air comes into contact with cold indoor surfaces, transforms into surface mist and then into

water that runs down the window causing wooden frames to rot and wallpaper and painted walls to blister. The tell-tale signs of dampness are often found on north-facing walls, the cooler side of any home, and especially in corners of rooms.

- 3) Poor ventilation: Humidity of indoor air can be reduced by ventilation. If air exchange is inadequate, then humidity accumulates indoors and leads to increased condensation. In addition, walls remain cool when a lack of free movement of indoor air prevents warm air from reaching them. Mould may therefore form where there is little movement of air, for example, in a windowless basement, or behind wardrobes and cupboards. In places where low ventilation comes together with cold surfaces (e.g. outside walls), they become the priority risk areas for mould growth.<sup>i</sup>
- 3.4 Normal, everyday living results in a significant amount of moisture production. Cooking, laundry, washing and human and animal respiration are the most significant sources of moisture in the typical home. The average family produces 10 litres of moisture every day. Managing this moisture is a necessary and important element of day-to-day home management. Households with children will tend to produce more moisture and children tend to experience the greatest health impacts from mould growth can be seen.
- 3.5 Changes in approaches to drying wet clothes – from drying outdoors or in drying rooms to drying indoors or use of tumble dryers impacts on moisture levels. Window management is another vital component of moisture management yet householders may not open their windows due to noise, air pollution, fear of crime or a desire to retain warmth. For reasons of retaining warmth householders may also close trickle vents or block air bricks.
- 3.6 Even when adequate heating and ventilation are installed dampness and mould growth may still occur where these are not used properly. Concerns about energy costs, misconceptions about heating patterns and concerns over extractor fan noise may mean householders unwittingly contribute to dampness levels. Supporting residents to change behaviour with regard to moisture management can be effective in making significant improvements to levels of condensation and damp.

#### **4.0 Impacts of damp housing on health and wellbeing**

- 4.1 Exposure to damp and mouldy environments may cause a variety of health effects, or in some people have no affect at all<sup>ii</sup>. Some people are sensitive to moulds. For these people, moulds can cause nasal stuffiness, throat irritation, coughing or wheezing, eye irritation, or, in some cases, skin irritation. People with mould allergies may have more severe reactions. Immune-compromised people and people with chronic lung illnesses, such as obstructive lung disease, may get serious infections in their lungs when they are exposed to mould. These people should stay away from areas that are likely to have mould, such as compost piles, cut grass, and wooded areas.
- 4.2 In 2004, the Institute of Medicine (IOM) found there was sufficient evidence to link indoor exposure to mould with upper respiratory tract symptoms, cough, and wheeze in

otherwise healthy people; with asthma symptoms in people with asthma; and with hypersensitivity pneumonitis in individuals susceptible to this immune-mediated condition. The IOM also found limited or suggestive evidence linking indoor mould exposure and respiratory illness in otherwise healthy children<sup>ii</sup>.

- 4.3 In 2009, the World Health Organization issued guidance, the WHO Guidelines for Indoor Air Quality: Dampness and Mould<sup>iii</sup>, stating:

*“Microbial pollution involves hundreds of species of bacteria and fungi that grow indoors when sufficient moisture is available. Exposure to microbial contaminants is clinically associated with respiratory symptoms, allergies, asthma and immunological reactions.*

*The presence of many biological agents in the indoor environment is due to dampness and inadequate ventilation. Excess moisture on almost all indoor materials leads to growth of microbes, such as mould, fungi and bacteria, which subsequently emit spores, cells, fragments and volatile organic compounds into indoor air. Moreover, dampness initiates chemical or biological degradation of materials, which also pollutes indoor air. Dampness has therefore been suggested to be a strong, consistent indicator of risk of asthma and respiratory symptoms (e.g. cough and wheeze). The health risks of biological contaminants of indoor air could thus be addressed by considering dampness as the risk indicator.”*

- 4.4 In their 2009 information brochure *Damp and Mould: Health risks, prevention and remedial actions*,<sup>1</sup> the World Health Organisation concludes that:

*Sufficient epidemiological evidence is available from studies conducted in different countries and under different climatic conditions to show that the occupants of damp or mouldy buildings, both houses and public buildings, are at increased risk of respiratory symptoms, respiratory infections and exacerbation of asthma. Some evidence suggests increased risks of allergic rhinitis and asthma. Although few intervention studies were available, their results show that remediation of dampness can reduce adverse health outcomes...*

*There is clinical evidence that exposure to mould and other dampness-related microbial agents increases the risks of rare conditions, such as hypersensitivity pneumonitis, allergic alveolitis, chronic rhinosinusitis and allergic fungal sinusitis.*

*Toxicological evidence obtained in vivo and in vitro supports these findings, showing the occurrence of diverse inflammatory and toxic responses after exposure to microorganisms isolated from damp buildings, including their spores, metabolites and components.*

*While groups such as atopic and allergic people are particularly susceptible to biological and chemical agents in damp indoor environments, adverse health effects have also been found in nonatopic populations. The increasing prevalences of asthma and allergies in many countries increase the number of people susceptible to the effects of dampness and mould in buildings.*

- 4.5 Other recent studies<sup>ii</sup> have suggested a potential link of early mould exposure to development of asthma in some children, particularly among children who may be genetically susceptible to asthma development, and that selected interventions that

improve housing conditions can reduce morbidity from asthma and respiratory allergies, but more research is needed in this regard.

- 4.6 Other research from the UK and elsewhere have reported an association between dampness, moisture and mould and the prevalence of respiratory symptoms among children of all ages: For instance, in one study, children in homes with damp and/or mould were two and a half times more likely to have coughs or wheezing than children in “dry” homes<sup>iv</sup>. Whilst, a UK study found visible mould was significantly associated with an increased risk of wheezing illness among children aged 9-11 years<sup>v</sup>. This significant association between visible mould and damp spots inside the house was also reported by a large Swedish study of households with children aged 1-6 years<sup>vi</sup>, a Finnish study of preschool and school-aged children<sup>vii</sup>, and a wider European study of older children in which the prevalence of asthma and chronic cough was higher in “damp” compared to “dry” homes<sup>viii</sup>.
- 4.7 Damp and condensation leads to cold homes which can exacerbate fuel poverty (where a household cannot afford to heat its home to an adequate standard of warmth). There is a social gradient in fuel poverty: the lower your income the more likely you are to be at risk of fuel poverty, putting you at further risk of social and health inequalities. There is strong evidence on the mental health and wellbeing impacts of fuel poverty and cold homes and the significant benefits to mental wellbeing from tackling fuel poverty,.
- 4.8 In addition, cold indoor temperatures affect and worsen other conditions such as the common cold, flu, pneumonia, arthritis, rheumatism, and chronic and/or long-term conditions, and can also delay recovery from illness. Individuals in cold homes may also be more vulnerable to accidental injury in the home as a result of reduced strength and dexterity.<sup>ix</sup> This may have particular implications for older people who are more vulnerable to injuries from falls.
- 4.9 Research shows that people living in well-insulated and adequately ventilated accommodation are less likely to visit their doctor or be admitted to hospital due to respiratory conditions than those living in damp homes.
- 4.10 Damp housing also impacts on people’s mental well-being. Studies have shown some association between dampness and mould with depression and general well-being.<sup>x, xi</sup>

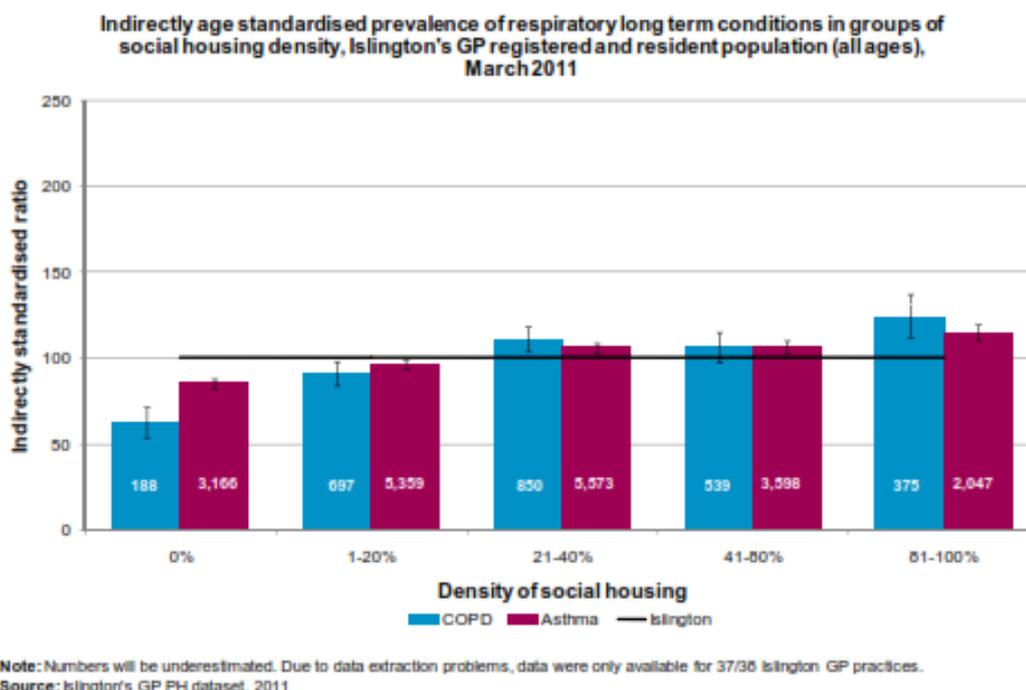
## **5.0 Prevalence of health problems associated with damp housing in Islington**

- 5.1 Islington had the fourth highest prevalence of asthma and COPD in London in 2014, and the fifth highest number of emergency admissions for respiratory tract infections among young children in 2012/13 – although the numbers of admissions appears to be reducing since a peak in 2007/08).
- 5.2 The Health Needs and Social Housing Profile (2012)<sup>xii</sup> for Islington found that in the areas of highest density of social housing COPD prevalence is 24% higher than expected, as is the prevalence of asthma (15%), depression (42%), dementia (42%),

chronic liver disease (57%), stroke (14%), CHD (10%) and psychotic disorders (65%), even when age has been taken into account (Chart 1). However the causes behind this association are multifactorial and difficult to disentangle. We cannot say this is due to higher levels of damp in social housing.

- 5.3 Census data (2011) shows that people living in rented accommodation in Islington are almost twice as likely to report that they have a limiting long term illness than those who own their own home (more than three times as likely for social renters). Unfortunately there is no way of looking at which health conditions these people have.

**Chart 1:** Prevalence of respiratory long term conditions in groups of social housing density, Islington, March 2011.



## 6.0 Damp housing in Islington

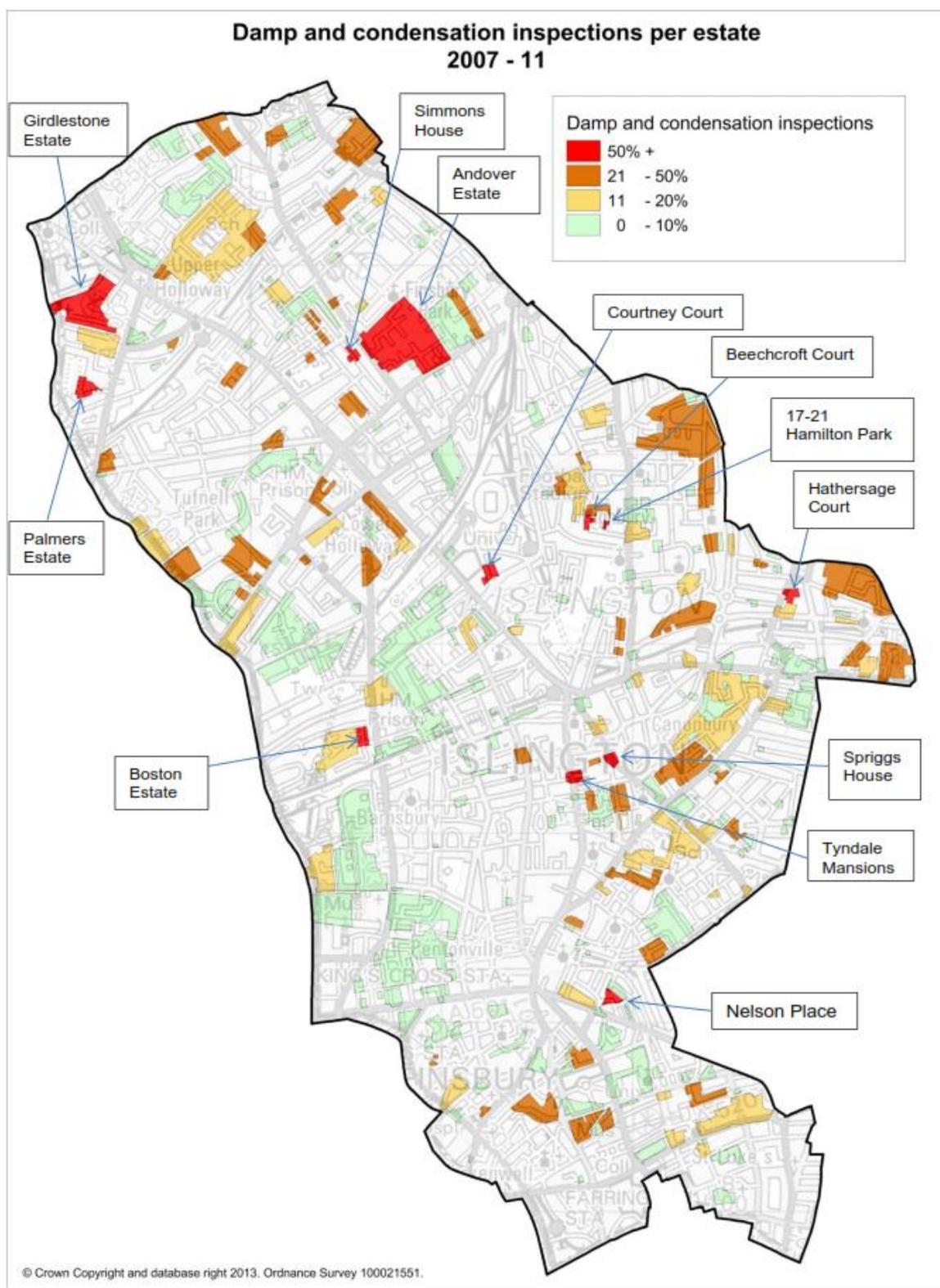
- 6.1 In 2013 about a million (999,000) English homes (4%) had problems with damp, compared with 2.6 million (13%) homes in 1996. Some 8% of private rented dwellings had some type of damp problem, compared with 5% of social rented dwellings, and 3% of owner occupied dwellings, although private rented dwellings tended to be older properties more prone to damp.<sup>xiii</sup>
- 6.2 The extent of damp housing in Islington is difficult to measure as estimates are largely dependent upon residents reporting incidences of damp and mould growth.
- 6.3 6,711 damp inspections were carried out between 2007 and 2015. Whilst between 2010 and 2014 the council's Residential Environmental Health Service inspected 665 properties where damp and/or mould problems were found, 133 of which were at such a level as to present a significant risk to the health of the occupiers (Category 1 hazards).

- 6.4 The 2008 Islington Private Sector Stock Condition Survey estimated that 869 owner-occupied and privately rented homes had a Category 1 Damp and Mould hazard, indicating that the extent of dampness and mould growth was likely to be harmful to health. This is an estimate of those where the council would be required to take action under the Housing Act 2004 and there are likely to be a further number of lower level Category 2 hazards.
- 6.5 Figure 1 shows the concentration of dampness inspection during the period 2007 – 2011. The two hotspots, in terms of levels of damp, are the Andover Estate and the Girdlestone Estate. Housing Property Services have completed the pilot works on parts of the Andover Estate. The works covered are Cyclical Improvement Works, Decent Homes Works and Dampness Works which include a combination of improved insulation and ventilation to properties. Incorporating lessons learnt from this pilot, the main contract, which will roll out this work to the remainder of the Andover Estate will start in Autumn 2015 and is, is scheduled to be completed by 2017/18. The pilot for the Girdlestone Estate is due to commence in January 2016 with completed roll out of the contract to due to be completed by 2018/19. The works covered are Cyclical Improvement Works, Decent Homes Works and Dampness Works which includes roof renewal, private balcony asphalt renewal and works to the internal duct system.

## **7.0 Tackling cold homes and damp in Islington**

- 7.1 Tackling cold and damp housing is important because of its association with a range of health conditions, from common colds and asthma through to respiratory and heart conditions that can lead to early death. Cold and damp homes are also associated with poor mental health and poor social and economic outcomes as well as fuel poverty. Addressing damp and condensation can be challenging as the source of the problem is not always easily identified and can be caused by a mixture of factors including structural deficits, a lack of or faulty damp coursing or condensation dampness caused by both human and building factors. Islington Council has a number of schemes to reduce impacts of damp housing and these go above and beyond national provision.
- 7.2 For social housing, Islington has invested significantly in improving the energy efficiency of its own housing stock. Between April 2010 and March 2015 Islington was able to improve the energy efficiency of around 17,000 council homes. Other social housing providers are improving the energy efficiency of their stock.
- 7.3 The Council has insulated all known fillable cavity walls and accessible lofts in its own housing stock. It has also fitted external wall insulation to 269 solid walled properties at the Holly Park estate and 36 properties at Neptune House. The Holly Park external wall insulation work is being evaluated over three stages, measuring the impact on residents' self-reported thermal comfort, energy use and bills, damp and mould, and health and wellbeing. The final results are due in October.

Figure 1 - Damp and condensation inspections per estate 2007-2011<sup>1</sup>



7.4 In early 2015 Islington also secured funding from UK Power Networks to run an education and awareness campaign on the Harvist Estate. This estate has the largest

<sup>1</sup> Although the map shows numbers of damp inspections per estate and not numbers of damp housing identified, the map gives a good indication of dampness prevalence by estate

concentration of electric storage heated properties in Islington. Working with residents to reduce running costs for a potentially costly heating method is likely to support more efficient heating and thus reduce risk of fuel poverty

- 7.5 Islington Council is working to deliver a number of Combined Heat and Power (CHP) networks across the borough. The first development opened in November 2012 in Bunhill ward, providing cheaper, greener heat to over 800 homes. Large council estates present some of the best opportunities for such developments and will deliver heat and power more efficiently and at lower cost to residents.
- 7.6 Islington's Housing Services developed a condensation protocol in 2014 with colleagues in Environment and Regeneration. This supports an agreed, consistent approach to tackling the problem of condensation and damp in council homes. The protocol commits the council to identifying the source of damp and taking action to address it, both through improvements and repairs to its properties and by educating residents about lifestyle changes they can make to reduce condensation in their home.
- 7.7 The council invests £2m per year in addressing dampness in its properties and £10m in improving energy efficiency to help relieve these problems.
- 7.8 As part of Islington's Warm Healthy Homes Programme, residents receiving certain benefits, with an older boiler can apply for an energy efficient replacement. Whilst those not on benefits can apply for a grant towards a new boiler. In 2013/2014, 533 boilers were replaced under the Safe and Warm (6), Private landlords (13) and Boiler Replacement Programme (514) schemes. 109 of these were fitted in the homes of vulnerable households.
- 7.9 The main private sector grant scheme, Safe & Warm, has been running since 2001, providing fully-funded energy efficiency and security measures to vulnerable owner-occupiers and leaseholders. The grant is provided by Residential Environmental Health, who are active in trying to identify and action the least energy efficient homes in the private rented sector. They are also committed to tackling poor private rented housing through the Housing Health and Safety Rating System.
- 7.10 For residents of all housing tenures Islington has invested in Energy Doctor in the Home. The programme, operated by Groundwork since 2009, is aimed at vulnerable residents and provides a home visit where advice is given on how to save energy in their home, how to use their heating system most efficiently and the Energy Doctor also fits smaller energy saving measures such as draught proofing and reflective radiator panels. Over 4,900 households have been assisted by the programme.
- 7.11 Islington's affordable warmth services have provided local energy advice services to residents for around 30 years and provide a drop-in facility, Freephone number and outreach service. The SHINE referral programme processes referrals from a range of partners in front-line service provision. In 2015 an escalated referral route was established whereby residents with chronic respiratory conditions are prioritised for

diagnostic survey and this has helped to develop relationships with partners in respiratory medicine.

- 7.12 In the council's Asset Management Strategy 2013-2043 consultation, residents in Islington's social housing said that preventing and resolving dampness in our properties was one of their top priorities. The council plans to allocate a total of £73m to carry out works to resolve known damp problems and tackle problem condensation to ensure all our homes are free of damp.

## **8.0 What more could we do?**

- 8.1 The Islington Private Sector Stock Condition Survey 2008 revealed that fuel poverty was particularly high amongst private tenants and single pensioners. These groups require particular attention.
- 8.2 Significant progress has been made on insulating lofts and cavity walls in our own stock. However Islington has a large number of older or otherwise challenging dwellings and further progress should be made with these, particularly where occupied by vulnerable residents.
- 8.3 Since social housing makes up around 45% of the borough's housing stock social landlords can have a huge impact on fuel poverty. Joint funding applications with other social housing providers could systematically address particular areas, be attractive to energy companies and produce economies of scale. Requiring new developments to offset CO<sub>2</sub> emissions associated with building could create a fund available to improve energy efficiency in Islington homes, including social housing.
- 8.4 Insulating solid walled properties presents the biggest challenge but would also potentially have the biggest impact on fuel poverty. Within the council's own stock there are 14,600 uninsulated solid walled homes. Energy Company Obligation funding is available for this work but has not been available at 100% The solid wall insulation scheme at Holly Park saw some 300 properties benefiting from insulation works, making it the largest external wall insulation scheme undertaken in London at that time. It is estimated that the insulation work will save each property around £185 a year on their energy bill. The evaluation of the Holly park work and any other similar national projects will feed into any decision-making on insulating solid walled homes in Islington.

## **9.0 Implications**

### **9.1 Financial implications**

Islington Council receives a ring-fenced Public Health grant from the Department of Health to fund the cost of its Public Health service. The total funding for 2015/16 is £25.4m however an in-year cut is expected circa £1.7m, with a future reduction in grant also expected.

There are no direct financial implications from this report. The cost of the review will be met from existing Council resources however any findings or recommendations from the report will need to be considered at a later date, and financial implications may result from implementation of the findings.

### **9.2 Legal Implications**

“The Health and Social Care Act 2012 (“the 2012 Act” ) provides the legal framework for the councils duties in respect of public health functions.

Section 12 of the 2012 Act inserted a new section 2B into the National Health Services Act 2006 , which imposes a duty on each local authority to take such steps as it considers to improve the health of people in its area. In addition the 20 12 Act places a duty on local authorities to reduce health inequalities in its area”

## 10.0 Recommendations

The committee are asked to note the contents of the report

### Attachments:

Appendix A - Scrutiny Initiation Document (SID) relating to a Scrutiny Review of the Health Impact of Damp Housing Conditions

Appendix B – WHO Brochure

### Final Report Clearance

#### Signed by



Julie Billett, Director of Public Health

Date: 03 Sep 2015

#### Received by

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Head of Democratic Services

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Date

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<sup>i</sup> World Health Organisation Damp and Mould: Health risks, prevention and remedial actions. Information Brochure. WHO 2009

<sup>ii</sup> Source: Centres for Disease Control and Prevention – Facts about Mold and Dampness

[http://www.cdc.gov/mold/dampness\\_facts.htm](http://www.cdc.gov/mold/dampness_facts.htm) ]

<sup>iii</sup> World Health Organisation Guidelines for indoor air quality: dampness and mould. WHO 2009

<sup>iv</sup> Peat J.K., Dickerson J., Li J. (1998). Effects of damp and mould in the home on respiratory health: a review of the literature. Allergy, 53 (2), 120-128.

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=9534909&dopt=Abstract](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9534909&dopt=Abstract)

<sup>v</sup> Venn A.J., Cooper M., Antoniak M., Laughlin C., Britton J., Lewis S.A. (2003). Effects of volatile organic compounds, damp, and other environmental exposures in the home on wheezing illness in children. Thorax, 58 (11), 955-960.

<http://www.ncbi.nlm.nih.gov/pubmed/14586048?dopt=Abstract>

<sup>vi</sup> Bornehag C.G., Sundell J., Hagerhed-Engman L., Sigsgard T., Janson S., Aberg N. et al. (2005). 'Dampness' at home and its association with airway, nose, and skin symptoms among 10,851 preschool children in Sweden: a cross-sectional study. Indoor Air, 15 (S10), 48-55.

<sup>vii</sup> Koskinen O., Husman T., Meklin T. (1999). Adverse health effects in children associated with moisture and mold observations in houses. *International Journal of Environmental Health Research*, 9 (2), 143-156.

<sup>viii</sup> Andriessen J.W., Brunekreef B., Roemer W. (1998). Home dampness and respiratory health status in European children. *Clinical & Experimental Allergy*, 28 (10), 1191-1200.

<http://www.ncbi.nlm.nih.gov/pubmed/9824385?dopt=Abstract>

<sup>ix</sup> Geddes I et al (2011) *The Health Impacts of Cold Homes and Fuel Poverty*. London: Friends of the Earth and The Marmot Review Team.

<sup>x</sup> Guite, H.F, Clark, C., and Ackrill, G., (2006) The impact of the physical and urban environment on mental well-being. *Public Health*. Vol 120(12), p1117-1126. <http://www.sciencedirect.com/science/article/pii/S0033350606003015>

<sup>xi</sup> Shenassa, E.D. et al. (2007) Dampness and Mold in the Home and Depression: An Examination of Mold-Related Illness and Perceived Control of One's Home as Possible Depression Pathways. *American Journal of Public Health*. October 2007; 97(10): p1893-1899. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1994167/>

<sup>xii</sup> NHS NCL (2012), Health needs and social housing. Islington Public Health Intelligence Team.

[http://www.islington.gov.uk/publicrecords/library/Public-health/Quality-and-performance/Profiles/2012-2013/\(2013-01-24\)-Social-housing\\_2012.07.16\\_FINAL.pdf](http://www.islington.gov.uk/publicrecords/library/Public-health/Quality-and-performance/Profiles/2012-2013/(2013-01-24)-Social-housing_2012.07.16_FINAL.pdf) accessed 1 September 2015

<sup>xiii</sup> English Housing Survey: Headline Report 2013-14.